

[54] **RECLOSABLE SEALED POURING BAG**

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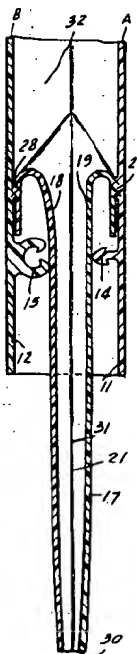
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**ABSTRACT**

A flexible container having a pouch portion and an opening leading to the pouch. The opening is releasably closable by flexible rib and groove elements formed along the walls of the container. A funnel portion attached to the walls of the container is normally positioned internally of the pouch portion when the container is not being used and is readily extensible outside the pouch when the rib and groove elements are opened and it is desired to remove contents from the container. The funnel portion may come to a point or apex to form a spout which when snipped at the tip thereof allows the contents of the pouch to be controllably released from the container without interfering with the operation of the rib and groove elements.

6 Claims, 6 Drawing Figures



**3,746,215**



**RECLOSABLE SEALED POURING BAG****BACKGROUND OF THE INVENTION****Field of the Invention**

The field of art to which this invention pertains is flexible containers having rib and groove elements for releasably sealing the opened end of the container and in particular to such a container having an internal funnel portion which may be readily extensible outside of the container to act as a spout for controllably releasing the contents of the container.

**SUMMARY OF THE INVENTION**

It is a principal feature of the present invention to provide an improved flexible container.

It is another feature of the present invention to provide a flexible container having means to prevent the contents of the container from interfering with the operation of the rib and groove elements.

It is a principal object of the present invention to provide a flexible container having rib and groove elements wherein a funnel portion is provided interior to the container which funnel portion may be extended outwardly of the container to act as a pouring spout.

It is another object of the present invention to provide a flexible container having rib and groove elements for sealably closing and opening the container and having a funnel portion attached inwardly of the rib and groove elements and normally positioned inwardly of the container but which may be reversed and turned inside out to extend outwardly of the container to cause the contents of the container to by-pass the rib and groove elements.

It is an additional object of the present invention to provide a flexible container having interlockable rib and groove elements wherein a funnel portion is attached to the inner side walls of the container and shaped generally in the form of a triangle having a tip portion which may be slit when the funnel portion is extended outwardly of the container to act as a pouring spout.

It is another object of the present invention to provide a flexible container as described above wherein the funnel portion is secured to the walls of the container and a perforated tail line.

It is also an object of the present invention to provide a flexible container as described above wherein the funnel portion is so hinged to the sidewalls of the container such that it is easily reversible by the weight of the contents of the container when the container is turned upside down.

It is still another object of the present invention to provide a flexible container as described above which is formed of a tube of flexible material sealed at its edges to define sides and opened at the one end between the sides to define flanges outwardly of the flexible rib and groove elements.

It is a further object of the present invention to provide a flexible container as described above wherein the container is formed of a sheet of flexible material with the sheet being heat sealed at the edges to define the container pouch.

These and other objects, features and advantages of the invention will be readily apparent from the following description of a preferred embodiment thereof, taken in conjunction with the accompanying drawing,

although variations and modifications may be effected without departing from the spirit and scope of the novel concepts of the disclosure.

**BRIEF DESCRIPTION OF THE DRAWING**

FIG. 1 is an elevation view of a flexible container according to the present invention illustrating the normal positioning of the funnel portion inwardly of the rib and groove elements thereof.

FIG. 2 shows a sectional view of a container according to the present invention with the rib and groove elements closed and with the funnel portion extending inwardly of the container before the apex is snipped.

FIG. 3 shows the funnel portion of the container as it would appear prior to being inserted into the container.

FIG. 4 shows a flexible container with the rib and groove elements closed and with the funnel portion in its normal position inwardly of the container but snipped at the apex thereof.

FIG. 5 shows an elevational view of the container with the funnel portion extended outwardly thereof and illustrating the snipped apex.

FIG. 6 shows a sectional view of a container illustrating the relative positions of the rib and groove elements when the funnel portion is extended outwardly of the container to act as a pouring spout.

**DESCRIPTION OF THE PREFERRED EMBODIMENT**

The present invention relates to a flexible container having interlocking rib and groove elements. The walls of the container itself may be formed of various types of thermal plastic material and may be formed either from a tube of material which is later heat sealed at its edges to form the sides of the container or may be formed from a sheet of flexible material which is heat sealed at the edges to define the container or pouch portion.

The interlocking rib and groove elements in themselves are well known in the art and many configurations of rib and groove elements may be employed to perform any one of a number of required functions. For instance, specific rib and groove elements may be employed to permit the container to be more easily opened from the outside than from the inside so that the contents of the container will not accidentally open the rib and groove elements.

Normally flanges are provided outwardly of the container adjacent to the rib and groove elements to enable one to grip the flanges and forcedly pull the rib and groove elements apart. These flanges may be provided so that one is longer than the other for easy access to the user or, for instance, one of the flanges may have a raised bead formed therealong to make the flanges more easily separable so that a person using the container can easily grip the flanges and pull apart the interlocking rib and groove elements.

The interlocking elements are then resealable simply by pressing the elements together from the outside of the container. The elements are carefully aligned at the inside of the container wall and simply by sliding the fingers along the outside of the container the elements are readily reclosable.

The rib and groove elements may be carefully formed of a soft flexible material in part thereof so that the

contents of the container are in fact comparatively air tightly sealed from the outside.

It is common to use such flexible containers to hold a variety of substances, such as, for instance, fine powders or the like. It has been discovered, however, that in removing only a portion of such powders from the container, the resealability of the container may be impeded by the presence of small granules of material in between the rib and groove elements. Today, the rib and groove elements are relatively small elements (they are shown out of proportion in the drawings) and it is important that granules of material from the contents of the container do not become trapped in the groove, for any such granules of material could easily prevent the rib from being pressed sufficiently deeply into the groove to become interlocked.

The present invention has provided a means for allowing the contents of such a container to be readily removed from the container and to so in such a way as to by-pass the rib and groove elements. This is accomplished generally by providing a bag within a bag type arrangement where the inner bag is connected to the outer bag inner walls at a point below the rib and groove elements.

In the present invention, the inner bag takes the form of a funnel made of the same type of flexible material as the outer bag, and the funnel is secured to the inner surface of the walls of the principal container just below or inwardly of the rib and groove elements. Therefore, when the rib and groove elements are closed, the inner bag or funnel portion is directed inwardly of the principal container. However, when it is desired to remove contents of the container, the container is merely inverted or turned upside down and the weight of the contents will force the inner bag to extend outwardly of the container past the rib and groove elements. In this way the contents of the container fall into the funnel portion never touching the rib and groove elements themselves. The funnel portion may be shaped in the form of a triangle so that an apex is formed at the tip thereof, and when the apex is snipped with a pair of scissors or merely torn, the contents may be controllably released from the container by using the funnel portion as a spout.

The inner bag or funnel portion may be heat sealed to the inner walls of the container and preferably in such a fashion so that the funnel may be easily turned inside out to extend outwardly of the container.

After a desired quantity of material is released from the container, the funnel portion is merely pushed back into the interior of the principal bag, and then the rib and groove elements are closed in the normal manner. Because the powder or other material in the container has not come into contact with the rib and groove elements, a complete reliable resealing of the rib and groove elements is made possible. Also in its unslit condition, the funnel gives extra protection to the contents of the bag, in the event of accidental opening of the bag.

Referring to the drawing in greater detail, FIG. 1 shows a container according to the present invention. In FIG. 1 a container 10 is shown as being formed of two sheets of flexible thermoplastic material 11 and 12. The sheets 11 and 12 are heat sealed at edges 13, and 13A to define a principal container 16. A pair of interlocking rib and groove elements 14 and 15 are formed along the top portion of the container walls 11 and 12

so that the container may be readily opened or closed as desired.

The container is provided with flanges A and B at the upper portion thereof. By gripping the flanges A and B, the rib and groove elements 14 and 15 may be readily opened to allow the contents of the container to be removed.

The inner bag or funnel portion of the container is illustrated generally at 17. The funnel portion itself is shown more clearly in FIG. 3 and includes a pair of side walls 18 and 19 which are heat sealed along edges 20, and 23 to the sides of the bag and edges 21 and 22 which are heat sealed to each other, but not to the bag walls, to form a bag or pouch portion which is triangular in configuration as shown to act as a spout.

The upper edges 24 and 25 are heat sealed to the inner surface of the main container or pouch at a point 26 and 26A shown in FIG. 1.

As shown in FIG. 2, the funnel 17 becomes hinged to the inner surface of the walls 11 and 12 at points 27 and 28. In this way the funnel portion may be turned inside out quite easily so that the apex 29 may be extended outwardly of the flanges A and B.

In FIG. 2 the funnel portion is shown to have the tip thereof snipped as at 30. In both FIGS. 1 and 2 the funnel portion is extended inwardly of the principal pouch or container, and the interlocking rib and groove elements 14 and 15 are shown in the locked position. In FIG. 5, the container 10 is shown in the upside down position with the apex 30 of the funnel portion extending outwardly of the flanges A and B. Since the hinge points 27 and 28 representing in the cross-sectional view the seal lines 26 and 26A of the funnel portion are inwardly of the rib and groove elements, as are the sealed funnel edges 20 and 23, the walls 18 and 19 of the funnel portion by-pass the rib and groove elements to shield these elements from the contents of the container as the contents are being removed through the funnel.

FIG. 6 shows an enlarged view of a section of the container of FIG. 5 showing the passageway 31 which is provided within the funnel portion and which may carry contents from the interior 32 of the main container directly to the snipped spout 30. Also, in FIG. 6 the shielding effect of the walls 18 and 19 of the funnel portion is illustrated. In particular, the walls 18 and 19 cover the rib and groove elements 15 and 14 and prevent the contents of the container from coming in contact with those elements.

When it is desired to reseal the container, the funnel portion 17 is merely tucked back into the container and the rib and groove elements are sealed in the normal fashion.

By providing a device as shown above an improved resealability for flexible containers having rib and groove elements is accomplished. In addition, an improved means of pouring the contents from the container is also achieved.

Also, additional security is provided for the containers contents, up to the time it is first used, in the event of accidental opening of the fastener.

We claim as our invention:

1. In combination:  
a flexible plastic pouch having opposing front and rear walls with said walls joined at the side edge and bottom edges;

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interlocking plastic rib and groove elements on the inner surface of the walls of the pouch for releasably closing the opening to the pouch and being spaced downwardly from the top edges to leave flange portions projecting above the elements;  
a flexible funnel member having side walls joined at their edges and having a base of a width equal to the width of the container walls and sealed continuously to the inner surface of the walls below said rib and groove elements;  
said funnel member projecting downwardly in the pouch to lie flat between the pouch walls, said funnel member being turned inside out when pulled outwardly of the pouch to dispense the contents, said funnel being tapered from the base toward an apex and being of a length from the base to the apex substantially greater than the length of said flanges so that the apex extends a substantial distance beyond the elements when the funnel is pulled outwardly from the pouch.

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2. A flexible container in accordance with claim 1 wherein said funnel member is normally sealed and may be severed at the tip thereof to form a spout.

3. A flexible container in accordance with claim 1 wherein said funnel member is formed of two sheets of flexible material shaped to have an apex and sealed together to form a funnel leading to the apex.

4. A flexible container in accordance with claim 1 wherein said pouch is formed of a tube of flexible material sealed at the edges and open therebetween to define said flanges.

5. A combination in accordance with claim 1, wherein the funnel member has a length less than the pouch walls.

6. A combination in accordance with claim 1, wherein the edges of the funnel member base lie flat within the pouch walls and extend upwardly substantially to the rib and groove elements.

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